

Krish Murjani

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EDUCATION

New York University

Masters in Computer Science | GPA: 3.7/4.0

Coursework: Algorithms, Artificial Intelligence, Human Computer Interaction, Deep Learning, Big Data

New York, NY

Graduated: 2026

University of Mumbai

Bachelor of Engineering in Computer Engineering | GPA: 9.14/10

Mumbai, India

Graduated: 2024

SKILLS

Programming Languages: Python, Swift, Java, C++, JavaScript, SQL, R, HTML/CSS, TypeScript

Frameworks & Libraries: React, Node.js, PyTorch, TensorFlow, LangChain, OpenAI API, SwiftUI, CoreML, ARKit

Databases & Cloud: MongoDB, PostgreSQL, MySQL, Firebase, AWS, (GCP)

DevOps & Tools: Git, GitHub, Docker, Kubernetes, CI/CD, CircleCI, Postman, REST APIs, Xcode, Figma, Sketch

AI: NLP, Computer Vision, LLMs, RAG, AI Agents, MCP, Prompt Engineering, Fine-tuning, Vector Databases

RELEVANT EXPERIENCE

Visualization and Data Analytics Research Center (VIDA)

Brooklyn, NY

Research Intern

May 2025 — Present

- Architected a visionOS app in Swift demonstrating a 7-stage chip design workflow via **interactive 3D visualization** on **Apple Vision Pro**, leveraging **ARKit** and RealityKit to render manipulable hardware component models at 60fps with sub-100ms latency.
- Engineered VR training modules for 9 nanofabrication processes (lithography, etching), designing a reusable scene composition system that **reduced per-module build time by 40%** enabling educators to configure simulation parameters without code changes.

Range Incorporation [\[Link\]](#)

Mumbai, India

Full Stack Developer Intern

Dec 2022 — Jun 2023

- Developed and integrated **front-end/back-end software for 10+ home automation systems**, reducing API response time by 40% and enabling seamless interaction between lighting, HVAC, and AV components across residential deployments.
- Implemented 6+ API integrations across multiple protocols (**Zigbee, Z-Wave, MQTT**), building 5 reusable components that reduced codebase complexity by 25% and improved system interoperability.
- Automated 60% of manual workflows, reducing deployment time from 3h to 35 mins for home automation environments.

Housie [\[Link\]](#)

New York, NY (Remote)

Full Stack Developer Intern

Jul 2022 — Oct 2022

- Designed a **VR-enabled checkout platform** using **Node.js** and **MongoDB** for a rental leasing application, **increasing user engagement by 45%** and reducing apartment viewing time by 35% while serving 2,000+ monthly active users.
- Programmed **interactive VR overlay with 6 key features** (furniture interaction, video embedding, application/deposit processing), optimizing asset load times using lazy loading and caching to support 250+ transactions during internship.
- Architected and deployed **end-to-end REST APIs** with **Node.js** and **Express**, implementing JWT-based authentication and designing **MongoDB schemas** to support core platform features across the full application lifecycle.

PROJECTS

Parachute — Collaborative Multi-Agent IDE [\[Link\]](#)

(Next.js, TypeScript, React, Yjs CRDTs, Monaco Editor, Docker)

- Built a browser-based collaborative IDE supporting multi-user real-time code editing using **Yjs CRDTs** over **WebSocket**, with live cursor presence, awareness protocol, and **300ms debounced bidirectional filesystem** sync via chokidar file watching.
- Engineered an **Orchestrator AI** coordination layer implementing file locking, **MD5-based conflict detection**, and a 3-tier agent flow classification (primary/detour/integrator) to eliminate duplicate work and **prevent merge conflicts** across concurrent agents.
- Integrated **Monaco Editor** with full IntelliSense and multi-cursor support, an **xterm.js + node-pty** in-browser terminal, and a **REST + WebSocket API layer**, containerized with Docker and deployed to **Fly.io**.

Robot Operating System Query System with RAG Architecture [\[Link\]](#)

(Python, Docker, HuggingFace)

- Engineered **RAG-powered** documentation system reducing ROS query response time by 70%, indexing 8+ GitHub repositories and 50+ Medium articles through automated **Docker ETL pipeline with MongoDB storage**.
- Fine-tuned Llama 3.2-1B using **LoRA** and **8-bit quantization** on 4,500+ ROS-specific Q&A pairs, improving response accuracy by 35% and deploying model to HuggingFace Hub.
- Built Gradio web interface with **Qdrant vector search** for sub-second semantic retrieval across 15,000+ documentation chunks, implementing microservices architecture via Docker Compose.

Contactless Heart Rate Monitor [\[Link\]](#)

(SwiftUI, Python, TensorFlow, CoreML)

- Architected a full-stack heart rate monitoring system integrating a native macOS frontend with a Python **signal processing backend**, enabling **real-time facial tracking** and heart rate visualization at **30fps for 56+ test subjects**.
- Built a real-time video processing pipeline using GREEN channel extraction and FFT-based signal analysis with 512-frame buffering, **reducing computational complexity by 60%** compared to multi-channel ICA methods while achieving **4.98 BPM mean absolute error across 110,000+ frames**.